Sustainable Support For Rural Mental Health And Adverse Childhood Experiences

By: **Kellie Reed Ashcraft, Lisa Curtin, Jenna Crawley, Annette Ward, Kayla Forliti,** and **Sierra Apple**

Abstract

Increasing attention over the last decade has focused on rural mental health, including the impact of the "social determinants of health," such as lack of economic opportunity, lack of affordable housing, transportation issues, social isolation, and pervasive poverty. Further, research regarding adverse childhood experiences (ACEs) has grown exponentially as urban and rural communities work collectively to address the impact of trauma and build resiliency within their communities. In this article, the diverse populations and unique characteristics of rural and Appalachian mental health are highlighted with a focus on ACEs and other risk and protective factors. The convergence of these factors and special populations are further demonstrated in one rural northwestern North Carolina county in Appalachia. In addition, targeted evidence-based and promising rural mental health practices are described. The authors conclude with recommendations and a framework for sustainable rural mental health support moving forward.

Ashcraft, K., Curtin, L., Crawley, J., Ward, A., Forliti, K., & Apple, S. (2021). Sustainable Support for Rural Mental Health & Adverse Childhood Experiences, *The Journal of the Blue Cross NC Institute for Health & Human Services: Sustainable Health*. Appalachian State University. V. 1, March 23, 2021. NC Docks permission to re-print granted by author(s). Publisher version of record available at: https://ihhs.appstate.edu/about/institute-journal

Sustainable Support for Rural Mental Health & Adverse Childhood Experiences

Kellie Reed Ashcraft, Lisa Curtin, Jenna Crawley, Annette Ward, Kayla Forliti, Sierra Apple

Increasing attention over the last decade has focused on rural mental health, including the impact of the "social determinants of health," such as lack of economic opportunity, lack of affordable housing, transportation issues, social isolation, and pervasive poverty. Further, research regarding adverse childhood experiences (ACEs) has grown exponentially as urban and rural communities work collectively to address the impact of trauma and build resiliency within their communities. In this article, the diverse populations and unique characteristics of rural and Appalachian mental health are highlighted with a focus on ACEs and other risk and protective factors. The convergence of these factors and special populations are further demonstrated in one rural northwestern North Carolina county in Appalachia. In addition, targeted evidence-based and promising rural mental health practices are described. The authors conclude with recommendations and a framework for sustainable rural mental health support moving forward.

Introduction

Rural mental health has long been a focus of interest,[1,2] and mental health in Appalachia has received special attention due to its shared characteristics with other rural communities[3, 4, 5] as well as distinct cultural characteristics.[6, 7, 8] In the following article, the authors provide a brief review of rural mental health and Appalachian mental health with a focus on adverse childhood experiences (ACEs), social determinants of health (SDOH), and protective factors as well as targeted evidence-based and promising practices in an Appalachian county in the mountains of western North Carolina. Finally, implications and future directions for sustainable rural mental health, including opportunities and challenges, are discussed for western North Carolina, Appalachia, and beyond.

Rural Mental Health

Many definitions exist for the term "rural." The US Census Bureau[9] defines urban as geographic areas of 50,000 or more people and urban clusters of at least 2,500 to 50,000 persons, with the term "rural" applied to all other areas. Approximately 19% of the US population lives in rural areas.[10] According to 2010 Census data, approximately 78 percent of the US rural population is white/non-Hispanic, 9 percent Hispanic, and 8% African American, with other races/ethnicity comprising the remainder of the population.[11] Further, while diversity growth in rural areas has been slower than in urban areas, the rural US is becoming more racially and ethnically diverse, accounting for 83% of the population growth between 2000 and 2010.[12]

In addition to growing racial and ethnic diversity, rural areas include a number of marginalized populations. Although rural populations experience poverty to a greater degree than urban and suburban populations, racial and ethnic minority populations in rural areas experience inequities in the social determinants of health and poverty at a higher level than rural white populations.[13, 14] Similarly, persons who identify as gay, lesbian, bisexual, and transgender and who live in rural areas, use health services at lower rates and experience greater levels of stigma compared to cisgender men.[15] Further, many persons who are homeless reside in rural areas. The National Alliance to End Homelessness[15] reports that 7% of persons who are homeless live in rural areas. The rural homeless population is considered an undercount, with more people living outdoors, in vehicles, with friends and relatives, and living in substandard housing.[15,16] In addition to the lack of housing or substandard housing, homeless rural persons also fare poorly compared to urban persons on other social determinants of health including transportation and persistent poverty.[16]

Rural and urban populations are similar in terms of prevalence rates for diagnosable psychiatric disorders and exposure to trauma.[17] However, rural and urban areas differ in some ways relative to mental health. In their study of mental, behavioral and developmental disorders (MBDD) among children ages two to eight years, Robinson and colleagues[18] found a higher prevalence of MBDD among children in rural areas (18.6%) when compared to children in urban areas (15.2%). Similarly, Ivey-Stephenson's team[19] reported that rural/nonmetropolitan areas had higher suicide rates than metropolitan or urban areas in their examination of US suicide trends from 2001-2015, and Fontanella et al[20] found similar trends among rural youth. The majority of differences between urban and rural areas in mental health likely relate to other contextual factors. Importantly, major differences exist between rural and urban areas in terms of availability, accessibility, and acceptability of mental health services.[4, 21]

Rural communities often lack available mental health services and mental health specialists.[22] Shortages of mental health providers are a major issue, with 60% of rural Americans experiencing these shortages.[23] While Mohatt[23] notes problems in tracking mental health providers, he reports that approximately 90% of psychologists and psychiatrists and 80% of Master of Social Work (MSW) professionals work in metropolitan areas. Mohatt[23] further notes that 65% of rural Americans receive mental health care from their primary health care provider and mental health crises in rural areas are primarily responded to by law enforcement personnel.

Even when mental health services are available, accessibility may pose a problem in rural areas. Accessibility includes lack of transportation, distance from available services, isolation, and telecommunication problems encountered in rural areas. In their 14-state study of rural-urban disparities in health and mental health home and community-based services (HCBS), Siconolfi and colleaguesl[24] found that accessibility and other issues resulted in fewer HCBS in rural areas among key stakeholder participants. As a result, rural individuals often relied on informal caregiving, likely due to these disparities or to cultural preferences. The researchers note that addressing inequities is paramount to limit long-term negative consequences for rural populations. Similarly, transportation was identified as an issue by caregiver and staff respondents in a study of barriers to and supports for family participation in a rural system of care for families of children with serious emotional problems.[25]

Another, often difficult to detect, barrier to rural mental health treatment is the perceived acceptability of seeking external support. In their review and meta-synthesis of targeted qualitative research, Cheesmond et al[3] identified four related barriers among rural residents in seeking mental health support. The first barrier identified across studies was "stoicism" or the value of rural residents to cope silently with mental distress. A related barrier was stigma or the perceived stigma that rural residents would be judged negatively if they seek external support for mental health issues. A third barrier was distrust of mental health providers from outside of the community and the mental health system as a whole. A final barrier identified was the meaning and language assigned to mental health issues and deemed acceptable to rural residents across studies.[3] These findings were supported by Snell-Rood's team[7] in their 2017 qualitative study of socio-cultural factors impacting treatment-seeking behaviors among low income, depressed women in Appalachia. Snell-Rood et al[7] found that participating women who experienced depression reported ambivalence in seeking help even when they had mental health concerns or depression, believing that they should be self-reliant. The women reported self-stigma about seeking mental health treatment as well as fear of stigma from others in the community.[7]

Appalachian Mental Health: Risk and Protective Factors

Mental health concerns and barriers to mental health treatment in rural parts of Appalachia look similar to other rural areas. The Appalachian Regional Commission[26] defines the Appalachian Region as 205,000 square miles of the Appalachian mountain range, including portions of North Carolina, Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, Ohio, Pennsylvania, South Carolina, Tennessee and Virginia, and all of West Virginia (para. 1).

Russ[27] suggested that "People of Appalachian culture are an invisible minority" (p. 1) and are not immune to mental health-related issues. Barriers to mental health treatment, including accessibility, availability,[28] and the cultural acceptability of seeking external mental health treatment[8] are similar in

Appalachia to other rural areas. Marshall and colleagues[29] reported that of the 420 counties which comprise the Appalachian region, 50 percent rank in the worst quintile in the nation for the number of mentally unhealthy days, with only two counties ranking in the best quintile. They also reported that the prevalence of depression among Medicare beneficiaries is 16.7 percent in comparison to a rate of 15.7 percent for all Medicare beneficiaries in the U.S, and the suicide rate in the Appalachian region is 17 percent higher than the national rate.[29] Intimate partner violence resulting in hospitalizations,[6] and prevalence of drug abuse[20] and drug overdose[31] are also concerns in Appalachia. Stressors are associated with the onset and maintenance of mental health problems, many of which can be mitigated by protective factors. Although not exhaustive, specific risk and protective factors are discussed below.

Adverse childhood experiences (ACEs)

ACEs' research is based on the 1988 study conducted by Dr. Vincent Felitti and his team[32] with a sample of 17,337 respondents.[33] Respondents provided data about abuse, neglect, and household dysfunction that occurred before the age of 18, and the researchers examined these scores in relation to various measures of health, disease, and risk behaviors.[32] The researchers found that ACEs were common, with 63% reporting at least one ACE. Further, the risk for negative health outcomes and risk behaviors increased exponentially for adults who reported more ACEs.[32] Of note, experiencing a greater number of ACEs increases the mental health risk for adults of depression, anxiety, suicide, post-traumatic stress disorder, and alcohol and drug abuse, along with other negative health outcomes.[33]

Research is more limited regarding ACEs and mental health among rural and Appalachian populations. In their research based on data from the 2011 and 2012 Behavioral Risk Factor Surveillance System (BRFSS) for nine states (N=79,810), Chanlongbutra, Singh, and Mueller[34] found that while rural residents experienced fewer ACEs than urban counterparts, over half of the rural respondents reported experiencing at least one ACE. Further, the odds of having poor mental health or asthma were higher for rural residents who experienced 3 or more ACEs. Similar findings were reported by Iniguez & Standowski[35] in their community-based ACEs study of 800 rural residents in northern and central Wisconsin. Using a follow-up telephone questionnaire to data collected from the BRFSS and from electronic medical records from a regional medical clinic, the researchers found that 62% of the respondents reported at least one ACE, a rate nearly identical to the original finding of Felitti et al.[32] Further, frequent mental distress and heavy drinking as well as other negative self-reported risk behaviors and negative health outcomes were associated with higher ACEs scores. These findings were consistent with data reviewed from the electronic medical records in which a diagnosis of depression or anxiety positively correlated with a higher number of ACEs.35 Similarly, Hege et al[36] found no statistically significant differences in the prevalence of ACEs between residents from 29 Appalachian counties in North Carolina compared to residents from other counties in North Carolina based on 2012 and 2014 BRFSS data. However, the researchers reported that there were statistically significant increases in mental distress, heavy alcohol consumption, smoking, and food insecurity for Appalachian respondents who reported four or more ACEs in comparison to non-Appalachian residents.[36] The researchers noted that research on ACEs and the social determinants of health may be particularly important for Appalachian and rural populations.

Indeed, in 2017, an Appalachia ACEs expert working group explored ways to address the opioid epidemic in Appalachia in relation to ACEs.[37] Professional stakeholders from seven states in central and southern Appalachia reviewed and discussed measurement of ACEs, vulnerability and protective factors, and local needs and resources. Specifically, the work group identified several adverse experiences not captured by current ACEs scales, which suggests the prevalence of ACEs found in previous research in Appalachia, and perhaps other areas, is an underestimate. The work group identified parental/caregiver unemployment and repeated attachment ruptures (e.g., multiple divorces or cohabitating relationships) as most prevalent, and death of an attachment figure, witnessing an overdose, and repeated ruptures in attachment as most impactful on children, which are typically not assessed.[37]

Social Determinants of Health: Risk and Protective Factors in Appalachia

Social determinants of health (SDOH) are the

conditions in which people live, and include factors such as housing, education, employment, transportation, access to food, access to health care, access to technology, social support, and culture, among other factors.[38] According to Marshall et al,[29] distressed Appalachian counties are those counties in the US that are the most economically disadvantaged. They report that 84 Appalachian counties qualify as distressed counties based on high poverty rates, unemployment, and low per capita income.[29] The researchers also report that adults between the ages of 25 to 44 in the Appalachian region are less likely (57.1%) than their counterparts in the rest of the US (63.3%) to have attained some level of post-secondary education. Further, in an investigation of the "diseases of despair," which refers to death due to alcohol and drug overdose, suicide, and liver disease, Meit et al[39] found that the Appalachian region had a 37 percent higher rate of mortality due to these diseases in comparison to the rest of the U.S between 2014-2015.

Social support and culture are additional social determinants of health. Although research is more limited, these often appear as protective factors or strengths in Appalachia. In Helton and Keller's[40] qualitative study of Appalachian women reflecting on their childhood, support including positive family support and familial communication, a caring neighborhood, and close relationships with other community members emerged as a common theme.[40] Similarly, a qualitative study conducted by Dakin, Williams, and MacNamara[41] of an often marginalized population (i.e., lesbian, gay, bisexual, and transgender older adults) in Appalachia, identified a "family of choice" including neighbors and pets as strong sources of support, along with religious or spiritual practices. These findings are consistent with the anthropological observation of social capital being a strength in Appalachia.[42] Appalachian social capital includes strong familial, community and informal social networks that thrive on interdependency, reciprocity, and trust.

A cultural determinant of health is religion, which is often a source of support in Appalachia, with a long historical, community, and individual tradition of finding comfort, community and connection in church, particularly among adults.[44] Pastors, preachers, and church leaders engage with their congregation and individuals often look to religious leaders to support them through both challenges and celebrations.[44] Connection to a faith community is associated with improved mental well-being.[41]

Strong connections to the land, to nature, and to a cultural heritage represent additional protective factors.[42] The mountains, streams and views provide both natural beauty and sustainability for families.[44, 45] Local people recall a shared "commons" area for livestock and farming[46] and practical use of the land for food and medicine.[47, 48] Health and mental health benefits related to time in less developed natural areas also are documented.[49]

The close collaborations among mental health providers are another strength of rural communities. In Pullman et. al's[25] study of supports and barriers for families participating in systems of care for children with serious emotional issues, staff and caregivers identified the "close-knit" service providers as an existing support (p. 215). Further, scarcity of formal mental health providers may facilitate collaborative relationships in rural areas and reinforce the importance and strength of social capital in Appalachia.[42]

A Case Example: Western North Carolina and Appalachia

Local population characteristics, history, culture, and resources are important to consider in the context of developing sustainable rural mental health infrastructure. To illustrate, a case example of a northwestern North Carolina Appalachia county (Watauga) is presented. The county has an estimated population of 56,177 in 2019.50 Although the county is predominantly Caucasian (91.6%), the county includes racial and ethnic minorities: 3.7% Hispanic or Latino; 1.9% African American, 1.6% bi- or multi-racial; and 1.2% Asian,[50] with persons who identify as Hispanic or Latino as the fastest growing ethnic minority group.[51] Other marginalized populations include persons who identify as gay, lesbian, bisexual, or transgender,[41, 52] and persons who are homeless.[53]

Social determinants of health, including risk and protective factors, also are illustrated for the county. The 2018 per capita income was $24,906, with a 21.2% poverty rate.[48] According to the Appalachian District Health Department,[54] the unemployment rate for bi- or multi-racial residents is 33.6 percent; for black or African American residents, 12.8 percent; and for residents of Hispanic or Latino origin (11.5%), compared to 8.2 percent for white or Caucasian

residents (American Community Survey Estimates, 2012-2016). The Appalachian District Health Department 2017 Map the Meal Gap 54 reports that 3 out of 10 households in the county are food insecure, and do not qualify for the Supplemental Nutrition Assistance Program (SNAP) or other similar benefits. Further, although 17 percent of North Carolina households report issues with housing, in this target county, approximately 28 percent of respondents report these issues.[54] Similar to other Appalachian and rural counties, the lack of transportation is considered a barrier to accessing services, particularly for older adults.[54] Finally, the most reported health concern from the community health survey is substance misuse, and community coalitions ranked the three health priorities for the county as substance use and prevention; mental/behavioral health; and physical activity and nutrition.[54]

One protective factor or strength is strong informal social support among community members. It is common for local businesses, schools, and organizations to hold spaghetti dinner fundraisers to support cancer or medical treatments for specific individuals, to conduct food or clothing drives for specific families, to establish Go Fund pages for community members in need, or to display money jars next to cash registers to raise funds to support a community member.

Similarly, a strong sense of family, a cultural belief of "taking care of your own," and deeply-held religious beliefs are important to many local families.[27, 55] Being "local" has significance community families, specifically having multiple generations born and raised in the county or a surrounding county. It "does not count' just to be born in the area. Being from a family living in the region for multiple generations automatically provides a level of credibility, as long as the family has a positive reputation.[27, 55] In addition, if an "outsider" or any formal service provider, belittles or disrespects a local client, even inadvertently, by discounting cultural beliefs, the relationship is damaged and may result in the client ending services, many times without explanation.[27, 55]

A cultural belief of "taking care of your own" also means that locals may not seek assistance outside of the family, but may be willing to accept assistance in desperate times.[55] This assistance, in the form of church and community connections[55] may provide support through phone calls, visits, prayers, food and supplies, and labor, particularly in times of sudden tragedy or physical health challenges or sudden tragedy.

Culture can be both a strength and barrier as a social determinant of health. For example, receptiveness to mental health services depends on many factors including, but not limited to, the community member's connection to their Appalachian heritage.[27, 55] Further, having a strong spiritual or religious foundation often serves as a guide for addressing challenges related to mental health.[40, 55] However, religion also has been detrimental for some. For example, some community members speak of feeling ostracized by their church for having experienced traumas over which they had no control, for having experienced addiction or been faced with prostitution, or for being a member of the LGBTQ community.[56] Mental health providers must recognize the complexity of culture in the different lives of community members they serve.

Another community strength is the long-standing collaboration among service providers which parallels Appalachian findings.[25] Service providers know one another personally, and have both formal and informal referral mechanisms for clients. Therapists in private practice commonly refer clients to other colleagues in the community due to full caseloads or specific areas of expertise. Similarly, community-wide committees often are initiated informally such as a substance collaborative initiated by a local therapist that includes private practitioners, staff from private non-profit agencies, governmental entities, and the local university. In addition, staff from different agencies often collaborate to seek funding for services and programs (e.g., cross-system mental health effort to serve families of children with severe emotional and behavioral issues; cross-system methamphetamine treatment and evaluation program).

Finally, the county includes some unique strengths and resources. A large regional public university is located in the county, providing employment, higher educational opportunities, and a number of tangible and intangible resources. In addition, the regional healthcare system and hospital are located in the county, also providing employment and healthcare benefits. These major resources are strengths that many other rural and Appalachian counties do not have at their disposal.

A Case Example: Targeted Evidence-based & Promising Mental Health Practices

With this backdrop, the target community highlights a number of evidence-based and promising mental health practices. that demonstrate the community's ability to address the mental health needs of its current and changing population. They also target social determinants of health while addressing community barriers and utilizing the community's protective factors and strengths. Importantly, a number of practices address the emerging area of ACEs through multiple linked efforts. In the following discussion, a number of these practices are described.

Trauma-Informed Community Initiative

A multi-year trauma-informed community effort has been underway for three years in the county. The effort includes non-profit agencies, the school system, the department of social services, public mental health, private mental health providers, the health department, the hospital, paramedics, law enforcement, the faith community, the university, and interested community members who engage at the individual, family, organizational, and community levels to recognize, prevent, and treat trauma, and build resiliency. The initiative has multiple foci: 1) providing targeted trainings for community members, groups, and organizations; 2) developing and advocating for trauma-informed policies at the agency, local, and state levels; 3) seeking funding to support specific and community-based interventions; 4) collecting and using agency, county, and community data to identify gaps and needs; and 5) facilitating a yearly, community-wide conference.[57, 58] Based on ACEs research, community-based, trauma-informed efforts are growing with 350 geographically based communities currently identified by ACEsConnection.com.[59] However, research about these efforts is limited and primarily descriptive.[60]

This community initiative illustrates a number of strengths. First, the initiative benefits from the close-knit, long-term relationships among service providers in the community. All of those involved are volunteers, and the initiative does not currently have paid staff. In addition, the initiative supports and facilitates trauma-based prevention and intervention targeted to individuals, children, and families collectively and through partnership organizations to mitigate ACEs. At the community level, the initiative has goals to address income disparities, and lack of affordable housing and substandard housing in the community, all of which are social determinants of health. Although work on these goals is just beginning, community participants already have demonstrated commitment and dedication to the initiative. Finally, a key goal for the next year is to focus on racial and ethnic trauma experienced by communities of color and the Latinx community within the county.

Triple P Parenting Program

The Positive Parenting Program (Triple P) is an example of an evidence-based preventive mental health and support program provided through a partnership between a local non-profit agency and the health department. The Positive Parenting Program has a strong evidence-base and may be used in prevention or intervention with parents,[61, 62] and was identified by the Appalachian ACES work group.[37] In the target community, the local health department provides trained staff while the non-profit agency identifies high-risk families and is a resource for other rural parents who could benefit from the program. Social support and education are provided to participating parents, which relieves isolation, reduces stress, and contributes to positive mental health. In addition, with the COVID-19 pandemic, the program is available online to parents through the non-profit agency, which makes it further accessible to rural parents.

This program is noteworthy for a number of reasons. First, the availability of the program online increases accessibility for all families regardless of transportation, a social determinant of health. Participating parents meet other parents thus increasing their social support and furthering community connections, another social determinant of health. Further, both the non-profit agency and the local department of social services refer vulnerable families to the program. Participating parents develop tangible skills and resiliency that support healthy child development and can prevent adverse childhood experiences.

Family Connects Program

A new prevention-focused, evidence-based program is a home-visiting nurse program. The program, "Family Connects," is available to all families within

the county with a newborn. The effort is the result of a partnership among the health department, the same non-profit agency, the local hospital, and a local pediatrics practice. The program provides a home visit from a postnatal nurse who conducts a standardized assessment, provides health services, answers questions, provides referral to other services, and provides a follow-up as needed.[63] The program launched in March 2020 amidst the pandemic, slowing implementation. Even so, staff have been able to offer the services through telehealth. In clinical trials of the program, families randomly assigned to the program reported more positive parenting behaviors, fewer serious health issues and injuries with their infants, and stronger connections to community resources in comparison to control families.[63]

Implementation of the program illustrates other strengths. First, through the current use of telehealth for service delivery and by providing services through home visits, the program successfully addresses accessibility issues and problems with transportation. In addition, social isolation of new parents is reduced, while connections to community resources and social support are enhanced. Further, stress that new parents encounter is lessened by the knowledge and skills provided by the nurse, which in turn reduces stress which underlies adverse childhood experiences and trauma.

Services for At-Risk Community Members

At-risk populations in the community include persons who are uninsured, homeless, or who may be experiencing intimate partner violence. To respond to their unique and multiple needs, a promising practice launched in 2010 through a collaborative grant between the local homeless shelter and a non-profit community health clinic provide health and mental health care to persons who are homeless as well as to uninsured and Latinx community members. The grant, which ran for four years, resulted in the hiring of a full-time mental health and substance abuse therapist who spent 20 hours a week at each agency providing individual counseling, workshops, and case management services to clients at both agencies. Due to its success, the health clinic and the homeless shelter established plans for continuing the program following the completion of the grant. The health clinic has since expanded the therapy services to include a second mental health therapist position, increasing therapist availability hours from 20 to 30 a week. Therapy at both agencies is free and voluntary. The therapist(s) have a good working knowledge of ACEs and trauma informed care, have been trained in trauma effective treatments, and seek consultation and additional training in order to meet the needs of the clients.

Additionally, the homeless shelter partnered with the local domestic violence program to provide workshops based on increasing resilience to any interested women. The workshops address a different topic each week, occur weekly for six weeks twice a year, are voluntary, free, and offer incentives. At this time, the program was suspended due to COVID-19, but plans exist to begin again when it is possible. It is important to note that service gaps still exist. While there is a current partnership between a local Latino health program and the health clinic to provide interpretive services, there continues to be a gap in providing mental health care to community members who do not speak fluent English. Spanish-speaking mental health therapists are identified as a current need.

With the pandemic, mental health and substance abuse counseling services transitioned from 100% in person to 100% telehealth and telephone sessions. The shelter set up a computer and space for residents to meet with the mental health provider in a private space, while former residents who no longer reside at the shelter can use their own technology for sessions, the shelter's technology for sessions, or can participate in phone sessions. Similarly, the clinic patients moved to a telehealth platform in their homes, engaged in telephone sessions, or were offered the chance to utilize the clinic's technology for sessions.

School-Based Mental Health Initiatives

Schools are a common focal point in rural communities. Three promising practices have been developed in the local school system, including a school-wide trauma-informed effort, a collaborative school-based therapy program, and a specialized treatment center at the high school.

A Trauma-Informed School System

The target county has ongoing efforts to become a trauma-informed school system.[57] Based on ACEs-

related research, these efforts are sometimes referred to as "Compassionate Schools".[64] A literature review by Fondren and her colleagues[65] noted that these efforts are being implemented across the US, with positive results identified for specific interventions. However, these and other researchers note that more rigorous research is needed, particularly for multi-tiered school efforts.[65,66] In the target county's school system, the model features ongoing trauma-based training for all school personnel; school-specific compassionate care teams; a "silent mentor" program pairing all school personnel (i.e., teachers, bus drivers, custodians) with at-risk students; installation of "calm corners" into each classroom; resiliency-skills training for students in the classroom, and development of a county-wide trauma-informed strategic plan.[55]

This effort demonstrates a number of positive factors. First, by locating the effort throughout the entire school system, all students benefit from resiliency skill development, multiple supportive and caring trauma-trained staff and teachers, and a consistent and positive school culture. Students from under-represented racial and ethnic groups, students with different identities, students who experience learning difficulties, and other vulnerable students benefit from the same services, resources and supports of the effort. The program is one of the most well-known efforts to address ACEs preventively.[64]

School-Based Therapy

Another promising practice is a collaborative school-based therapy program between the regional mental health provider and the school system. The program was developed in 2005 to serve children with mental health concerns who were underserved and to eliminate barriers including transportation issues, caretaker and/or child missing time from work and school, and stigma in seeking treatment. The program began with one mental health provider available a few hours per week in some of the schools, and expanded to every school in the county, including the high school. Schools provide the therapy space, and assist with referrals and coordination with teachers regarding appointments. Therapists are employed by the regional mental health provider, and meet with students and their families in the school and make home visits as needed, taking into consideration the students', families' and teachers' wishes and recommendations regarding interventions. Further, a specialized contract for mental health care was developed by the school system and regional mental health provider to serve vulnerable students, including uninsured and undocumented Latinx students.

High School-Based Mental Health Treatment

A final promising school-based practice is the result of a mental health partnership between the school system and the local regional university.[65] The practice already has a strong evidence base with demonstrated positive findings to date.[67, 68, 69] The partnership began in 2006 at the only high school in the county, and has since expanded into 2 adjacent rural school districts. The university-school partnerships are called Assessment, Support, and Counseling (ASC) Centers. The signature services are individual cognitive-behavioral therapy (CBT) and suicide prevention, and school-wide and community education and referral also are provided. The suicide prevention components include crisis assessment, Counseling on Access to Lethal Means (CALM), and use of the Collaborative Assessment and Management of Suicidality (CAMS) program. In addition to these components, school-wide and community education is offered, along with referrals to outside agencies and providers. Thus, the ASC Center is aligned with the Multi-Tiered Systems of Support (MTSS) Model.[70] The program not only addresses mental health concerns, but supports students around gender identity, sexual orientation, past and current trauma, and ACEs.[57, 71] Based on the results of several published studies, ASC Center services have been shown to reduce psychological distress,[67, 71] reduce major depressive symptoms,[72] are correlated with improved academic outcomes,[78] help reduce suicidal ideation and prevent attempts,[73, 74,75] and reduce access to lethal means.[75] Not only does the program address mental health concerns, therapists also assess and may address past and present trauma and ACEs among youth. Students who identify as different gender and sexual identities have a confidential and safe space to explore and discuss their identities. Because the services are located at the high school, stigma is reduced, and barriers such as transportation, insurance, and costs are eliminated.

Church-Based Therapy

Another common gathering place and source of support are churches. A promising practice addressing mental health in the region is a therapy effort sponsored by a church that provides spiritual and emotional support, and professional mental health and substance abuse services to community members. In fact, the church considers this effort a ministry, and integral to its mission. Recent research demonstrates support for faith-based therapy to address mental health and substance abuse issues,[76, 77] and the importance many Appalachians place on the connection of health and well-being to faith further strengthens this type of effort.[55]

The ministry, while initially intended for members of the church's congregation, was opened to other congregations in the region due to its success. Since this is a ministry, accessibility and affordability are paramount. This includes reduced costs, support from a home church or a donation, but everyone is provided care regardless of ability to pay. A total of seven part-time counselors work with the ministry. When the counselors are at full capacity, they refer participants to other providers in the community. The clinicians work as independent contractors, and possess clinical licenses or associate licenses while working to full licensure.

The counselors identify with the Christian faith and work with participants from a Biblical-based perspective while utilizing appropriate knowledge and skills from secular education and experience that is consistent with that Biblical perspective. As a result, participants experience counseling from a culturally sensitive and strengths-based perspective. Even participants not affiliated with a church but who have connections to this religious belief system experience the same level of support and respect for their values and beliefs.[26]

This Biblical worldview is important to consider in this region since many decisions are based on this construct[54] for residents holding this worldview. Although specific expressions of Christian faith in the region vary, the influence of this belief system is prevalent, and the levels of acceptance and adherence to these beliefs is important to assess.[27] In addition, the sponsoring church houses a strong Latinx ministry program. Because of this connection, members of the Latinx community may be referred to counseling services, and counselors can access assistance for translation when needed.

Like many of the county's mental health efforts, the program continues to provide services despite the pandemic. Many participants are using phone calls and telehealth platforms to continue counseling. Some participants have been unable to continue due to other pressing issues, such as caring for and educating their children or the inability to find a time and location for privacy. As restrictions ease, counselors are beginning to see some clients in person as well as accommodate clients with telehealth appointments.

This program demonstrates multiple strengths. First, the program embraces the cultural and religious values of many community members. Further, since counseling is provided from a Biblical perspective, stigma in receiving mental health services is reduced. Second, the services are offered by culturally-sensitive and well-qualified counselors, and services are delivered from the auspices of the church, a trusted and valued community partner. In addition, through telehealth or church-based therapy, transportation issues are minimized or eliminated, and participants with limited resources are able to receive services through financial support from their home churches. Finally, co-location of the program at the church which already has an active Latinx ministry allows for access to a growing and vulnerable population.

Public Mental Health & Universal ACEs Screening

Another promising practice is universal screening for adverse childhood experiences (ACEs) among consumers served by the public mental health provider in order to provide trauma-informed services. The original ACEs questionnaire demonstrated strong test-retest reliability.[78] With the advent of COVID-19, the agency pivoted services and is now offering assessment and services by phone. Teletherapy increases access to services for consumers of all socioeconomic levels and may decrease the stigma of being observed visiting the agency. It also addresses the barrier of transportation, while reducing social isolation and increasing support. Finally, by universally screening for ACEs, the public mental health provider normalizes the prevalence of ACEs among consumers and has the capacity to address ACEs with targeted, trauma-informed treatments. Some cautions are warranted. Recent researchers note methodological

and ethical concerns with universal ACEs screening, and they recommend careful review prior to implementation of any ACEs' tools.[79, 80] Further, as noted by an Appalachian research group, the original ACEs tool may not include some adverse events experienced by children in Appalachian.[376]

Interprofessional University Clinic

One of the unique strengths is the location of a large regional public university in the community that provides many benefits. One of those benefits was the creation of an interprofessional clinic. A review of literature regarding family therapy and rural mental health[4] identifies interprofessional, integrated health care settings as a viable solution for providing mental health services in rural communities, while university-community partnerships have led to the creation of clinics that address the lack of psychiatric services in rural areas[81] and the lack of services for vulnerable populations such as migrant workers.[82] Currently, the interprofessional clinic includes speech/language services, audiological services, and social work, among others. Currently, social work students under the supervision of social work faculty provide clinic services based on community needs and input from community providers. The students work collaboratively with other university departments and community agencies to address community gaps. For example, social work students are currently engaged with the local school system, providing counseling, making home visits, and participating in community meetings. They also provide community education, and work with clients in the clinic as well as the community.

Again, COVID-19 created additional challenges, necessitating reliance on telephone contacts and sending resource information through email. In the coming year, students will be exploring more options for telehealth platforms to increase outreach to the community. Even so, the clinic demonstrates a number of strengths. First, working collaboratively with the community, the university is aware of service gaps, avoids duplicating services, and is able to provide missing community services. Second, since services are provided by students under faculty supervision, it is possible to provide services at minimal and no cost, which eliminates finances as a barrier for community members. Further, by providing services by telephone, through home visits, or at locations within the community, the clinic addresses the common barrier of transportation.

In sum, the evidence-based and promising practices described in this rural community case example highlight strengths and opportunities for other rural communities in addressing mental health. Of note, the majority of the practices were developed with community members and stakeholders, were based on identified needs, and developed and utilized partnerships. In addition, many started with grant or agency support, yet grew toward sustainability over time. Finally, ingenuity, flexibility and community partnerships allowed for a nimble response to the uncertainty introduced by the COVID-19 pandemic. In the final section, discussion of the challenges, opportunities and recommendations for sustainable rural and Appalachian mental health are provided.

Implications and Recommendations for Sustainable Rural & Appalachian Mental Health

Due to the unique characteristics of every rural community, it is not possible to generalize from the successful practices in the example. Hargrove, Curtin and Kirschner[83] further state that individuals, agencies, communities, and policymakers must recognize the heterogeneity and uniqueness of each rural community, particularly when such a community may be associated with unhelpful stereotypes. Stereotypes, stigma, risk factors, growing diversity among the population, and fewer mental health and financial resources impact nearly every rural community. However, rural communities possess numerous strengths including strong informal networks and collaborations that can be used to create opportunities.

Based on the example provided, a number of themes emerge as recommendations: 1) expanding use/access to telehealth services and advocating for expanded access and continued flexibility; 2) building on existing collaborative relationships to fund and sustain varied mental health practices; 3) creating and maintaining culturally-sensitive and respectful services with trusted providers and organizations; 4) attending to the needs of diverse and vulnerable populations; 5) conducting intervention research on mental health practices and remaining data-informed; and 6) working towards formal alignment and collaboration within and among systems.

Expanding use/access to telehealth services and advocating for expanded access and continued flexibility. As identified by the practice examples, many local mental health providers were able to quickly pivot and use telehealth and other technologies to continue to provide therapy and other services in response to the pandemic. These technologies helped participants overcome transportation barriers and social isolation. However, the pandemic also highlighted inequities in access due to lack of broadband coverage and costs. As a result, it is incumbent that local, state, and federal policy makers pass legislation with adequate funding to increase access by expanding rural broadband coverage and to reduce individuals' costs. Similarly, mental health licensing bodies and insurance providers demonstrated flexibility regarding provision of telehealth services and reimbursing for those services. Again, it is incumbent that policymakers and organizations advocate for continued flexibility from these bodies and insurers to continue to use telehealth and related technologies for provision of mental health care.

Building on existing collaborative relationships to fund and sustain varied mental health practices. The practice examples demonstrate the strong collaborative relationships between and among organizations. Research also identifies this as a strength among rural communities.[25] These collaborative relationships are beneficial in providing alternatives to meet the mental health needs of diverse community groups and are integral to funding and sustaining mental
health services. In addition, rural communities may be better positioned to seek larger funding opportunities where they may not have qualified previously due to geographic size and a smaller population.

Creating and maintaining culturally-sensitive and respectful services with trusted providers and organizations. Another theme across many of the practices is the importance of service providers and organizations providing culturally-sensitive and respectful services. This is particularly relevant when community members have experienced stigma for their cultural and religious beliefs or racial or ethnic group membership. Cultural sensitivity includes use of culturally appropriate assessment tools and treatment that integrates cultural beliefs and practices. These practices demonstrate cultural humility by integrating cultural values and beliefs. In addition, cultural sensitivity can be facilitated by those hired by organizations and by the organizations entrusted with providing these services. Hiring clinicians with clinical expertise and knowledge but who also have shared lived experiences with their clients can enhance trust and facilitate treatment. Similarly, providing services from organizations that already are trusted and respected within the community (i.e., faith-based organizations, schools) is particularly helpful for sustainability and effectiveness.

Attending to the needs of diverse and vulnerable populations. As illustrated in the community example, rural communities are becoming more racially and ethnically diverse,[11] and include vulnerable populations who may get "lost" when planning for, and delivering mental health services. As a result, it is imperative that agencies engage these populations in service delivery and implementation. As evident in the example, this includes providing services directly to vulnerable populations (i.e., persons who are homeless, members of the Latinx community, etc.), locating services strategically, and providing services in the language of populations (i.e., Spanish-speaking populations). For rural communities, this can be difficult due to limited resources. However, when seeking funding through collaborative grants, communities may include targeted components that address the needs of their special populations.

Conducting intervention research on mental health practices and remaining data-informed. Some of the community case examples (i.e., Triple P Parenting Program, Family Connects Program) have a strong research base, while another example (i.e., the Assessment, Screening, and Counseling Center) is engaged in ongoing intervention research. While delivering mental health services is the primary goal, conducting ongoing research is integral. Intervention research can inform clinicians, agencies, and the community about outcome achievement, changes needed, and gaps in services as well as the use of using existing and available data (i.e., the trauma-informed community initiative). With the community highlighted, the location of a regional public university in the community is a major benefit. Although many rural communities do not have such a resource, research can be included in collaborative grant and funding requests and agencies and

communities can seek collaborations with individual researchers, community colleges, and various think tanks and non-profits to conduct research, collect and present existing data, and provide consultation.

Working towards formal alignment and collaboration within and among systems. Seeking formal, ongoing collaboration in the community is a final theme and recommendation. In the case example, community agencies often have collaborated, including one-time funding opportunities or time or grant-limited multi-disciplinary community efforts. Formalizing these collaborations and having periodic ongoing communications between and among community agencies is another recommendation. Much like the trauma-informed community initiative example, formalizing collaborations and providing a venue for formal and periodic communication provide opportunities to identify community-level outcomes, engage in system alignment, and avoid duplication of services. In fact, the existing trauma-informed community collaborative provided the foundation to convene key faith-based organizations, the school system, local businesses, agencies, and interested individuals to meet to collectively address food insecurity experienced by many individuals and families due to the pandemic in the spring, 2020. Thus, formal cross-system collaboration and communication allows communities to address emerging needs as well.

While rural communities experience challenges, they also possess strengths to meet the diverse mental health needs of their community. The recommendations presented are not a panacea for addressing mental health in rural communities, but they may provide guidance for service providers, administrators, policy-makers, and communities. Most importantly, sustainable rural mental health services are well within the realm of possibility for western North Carolina, Appalachia, and other rural communities.

Acknowledgements

The authors would like to thank the following individuals for their expertise and contributions to this manuscript: Dr. Murray Hawkinson, Project Director of the Certified Clinical Behavioral Health Center with Daymark Recovery Services in Wilkes County, NC; Dr. Kurt Michael, the Stanley R. Aeschleman Distinguished Professor in the Department of Psychology, Appalachian State University; and Ms. Denise Presnell, MSW, School Social Worker, Watauga County Schools and Co-Chair, Watauga Compassionate Community Initiative.

The authors of this manuscript report no conflicts of interest.

Kellie Reed Ashcraft Ph.D. MSW Professor, Department of Social Work. Appalachian State University, Boone, NC
Lisa Curtin Ph.D. Professor Clinical Psychology Psy.D. Director of Clinical Training Clinical Psychology M.A. Program Director Department of Psychology. Appalachian State University, Boone, NC
Jenna Crawley MA, LPC, LCAS Mental Health & Substance Abuse Therapist. Hospitality House of Northwest North Carolina, Boone, NC
Annette Ward LCSW, LCAS Senior Lecturer. Department of Social Work Appalachian State University, Boone, NC
Kayla Forliti BS MSW Student. Department of Social Work Appalachian State University, Boone, NC
Sierra Apple BSW MSW Student Department of Social Work Appalachian State University, Boone, NC

References

1. Muhlberger EV. Collaboration for community mental health. Soc Work. 1975; 20(6): 445-447.
2. Dushman A. History of medicine. Community health in rural America during the mid-20th century. AMA J Ethics. 2020; 22(3): E248-252. doi: 10.1001/amajethics.2020.248.
3. Cheesmond NE, Davies K & Inder K.J. Exploring the role of rurality and rural identity in mental health help-seeking behavior: a systematic qualitative review. J Rural Mental Health. 2019; 43 (1): 45-59. http://dz.doi.org/10.1037./rmh0000099.
4. Jensen EJ & Mendenhall T. Call to action: family therapy and rural mental health. Contemp Fam Ther. 2018; 40: 309-317. https://doi.org/10.1007/s10591-018-9460-3.
5. Smalley K B, Yancey CT, Warren JC, Naufel K, Ryan R, & Pugh JL (2010). Rural mental health and psychological treatment: a review for practitioners. J Clin Psychol. 2010; 66(5): 479-489. doi: 10.1002/jclp.20688.
6. Davidov DM, Davis SM, Motao Z, et al. Intimate partner violence-related hospitalizations in
7. Appalachia and the non-Appalachian United States. PLoS One, 2017; 12 (9): D0184222. Retrieved from https://doi.org/10.1371/journal.pone.0184222.
8. Snell-Rood, C, Leukefeld C, Marcum A, Hauenstein E, Feltner F, & Schoenberg, N. Mental health treatment seeking patterns and preferences of Appalachian women with depression. Am J of Orthopsych. 2017; 87(3): 233-241. http://dx.doi.org/10.1037/ort0000193.
9. Thacker NE, & Gibbons MM. Complicated grief in rural Appalachia: using feminist theory to reconcile grief. J Mental Health Couns. 2019; (4): 297-311. https://doi.org/10.17744/mehcA 1.4.02.
10. US Census Bureau (2019). 2010 census urban and

rural classification and urban area criteria. Published 2019. https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html. *Accessed June 6, 2020.*US Census Bureau. *Rural America.* Retrieved from https://gisportal.data.census.gov/arcgis/apps/MapSeries/index.html?appid=7a41374f6b03456e9d138cb014711e01#:~:text=The%20Census%20Bureau%20defines%20rural,tied%20to%20the%20urban%20definition *Accessed June 6, 2020*

11. Housing Assistance Council. Race and ethnicity in rural America. Rural research brief. Washington, DC: HAC. Retrieved from http://www.ruralhome.org/storage/research_notes/rrn-race-and-ethnicity-web.pdf. Published April 2012.
12. Johnson KM. Rural demographic change in the new century. Slower growth, increased diversity.Issue Brief 44, Durham, NH: Carsey Institute. Retrieved from https://scholars.unh.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1158&context=Carsey. Published Winter, 2012.
13. Burton, LM, Lichter DT, Baker RS, & Eason JM. Inequality, family processes, and health and the "new" rural America, American Behavioral Scientist. 2013; 57 (8): 1128-1151. DOI: 10.1177/0002764213487348.
14. Whitehead, J, Shaver J. & Stephenson R. Outness, stigma, and primary health care utilization among rural LGBT populations, PLoS One. 2016; 11 (1): e0146139. DOI: 10.1371/journal.pone.0146139.National Alliance to End Homelessness. Rural homelessness. https://endhomelessness.org/resource/rural-homelessness/. Published January 17, 2010.
15. National Advisory Committee on Rural Health & Human Services. Policy brief: homelessness in rural America. https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/rural/publications/2014-homelessness.pdf. Published July, 2014.
16. McCall-Hosenfeld JS, Mukherjee S, & Lehman EB. The prevalence and correlates of lifetime psychiatric disorders and trauma exposures in urban and rural settings: results from the National Comorbidity Survey Replication (NCS-R). PlosOne. 2014; 9(11): e112416. www.plosone.org.
17. Robinson, LR, Holbrook JR, Bitsko RH, et al. Differences in health care, family, and community factors associated with mental, behavioral, and developmental disorders among children aged 2-8 years in rural and urban areas-United States, 2011-2012. MMWR Surveill Summ, 2017; 66(No. SS-8):1–11 doi: http://dx.doi.org/10.15585/mmwr.ss6608a1.
18. Ivey-Stephenson AZ, Crosby, AE, Jack SPD, Haileyesus T & Kresnow-Sedacca MJ. Suicide trends among and within urbanization levels by sex, race/ethnicity, age group, and mechanism of death-United States, 2001-2015. MMWR Surveill Summ, 2017; 66 18), 1-10. DOI: 10.15585/mmwr.ss6618a1.
19. Fontanella CA, Hiance-Steelesmith, DL, Phillips GS, et al. Widening rural-urban disparities in youth suicides, United States, 1996-2010. JAMA Pediatrics, 2015; 169: 466-473. doi:10.1001/jamapediatrics.2014.3561.
20. Smalley KB, Rainer J, & Warren, J. Rural mental health. Issues, policies, and best practices. New York, NY: Springer Publishing; 2012.
21. Jensen EJ, Wieline E, & Mendenhall T. A phenomenological study of clinicians' perspectives on barriers to rural mental health care. J Rural Mental Health. 2020; 44(1): 51-61. https://doi.org/10.1037/rmh0000125.
22. National Institute for Mental Health [NIMH]. Mental health and rural America: challenges and opportunities. Office for Research on Disparities and Global Mental Health 2018 Webinar Series. Bethesda, Maryland: NIMH. Retrieved from https://www.nimh.nih.gov/news/media/2018/mental-health-and-rural-america-challenges-and-opportunities.shtml. Published May 30, 2018.
23. Siconolfi D, Shih RA, Friedman, EE, et al. Rural-urban disparities in access to home and community-based services and supports: stakeholder perspectives from 14 states. J Am Med Dir Assoc. 2019; 20(4): 503-508. https://doi.org/10.1016/j.jamda.2019.01.120
24. Pullman MD, VanHooser S, Hoffman C, & Heflinger, CA. Barriers to and supports of family participation in a rural system of care for children with serious emotional problems.
25. Community Mental Health Journal. 2010; 46: 211-220. DOI 10.1007/s10597-009-9208-5.
26. Appalachian Regional Commission. The Appalachian region. https://www.arc.gov/appalachian_region/TheAppalachianRegion.asp. Accessed June 7, 2020.
27. Russ KA. Working with clients of Appalachian culture. http://counselingoutfitters.com/vistas/vistas10/Article_69.pdf. Published 2010.
28. Pillay Y, Tang Lu, H, Givson S, & Fulton B. Brief report. The experiences of North-Central rural Appalachian clients who utilize mental health services. J Rural Mental Health. 2018; 42 (3/4):196-204. http://dx.doi.org/10.1037/rmh0000100.
29. Marshall JL, Thomas L, Lane NM, et al. Health disparities in Appalachia. https://www.arc.gov/assets/research_reports/Health_Disparities_in_Appalachia_August_2017.pdf. Published in August, 2017.
30. Mathis SM, Hagemeier N, Foste, KN, Baker K, & Pack, RP. "It's took over this region": patient perspectives of prescription drug abuse in Appalachia. Subst Use Misuse. 2020; 55(1): 37-47. Doi: 10.1080/10826084.2019.1654514.
31. Singh GK, Kogan MD, & Slifkin RT. Widening disparities in infant mortality and life expectancy between Appalachia and the rest of the United States, 1990-2013, Health Aff. 2017; 36(8): 1423-1432. DOI: 10.1377/hlthaff.2016.1571.
32. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. Am J Prev Med. 1998; 14(4): 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8.
33. National Center for Injury Prevention and Control, Centers for Disease Control & Prevention. About the CDC-Kaiser ACE study. Atlanta, Georgia: Centers for Disease Control & Prevention, US Department of Health and Human Services. https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/about.html. 2020.
34. Chanlongbutra A, Singh GK, & Mueller CD. (2018). Adverse childhood experiences, health-related quality of life, and chronic disease risks in rural areas of the United States. J Environ Public Health. 2018; Article ID 7151297: 1-15. https://doi.org/10.1155/2018/7151297.
35. Iniguez KC. & Stankowski RV. Adverse childhood experiences and health in adulthood in a rural population-based sample. Clinical Medicine & Research. 2016; 14 (3-4), 126-137. doi:10.3121/cmr.2016.1306
36. Hege A, Bouldin E, Roy M, & Reed-Ashcraft K. Adverse childhood experiences among Appalachia counties in North Carolina, 2012 & 2014: The association with social determinants of health and health outcomes. 2018. Manuscript submitted to SSM: Population Health. Manuscript under review.
37. Mattson K, & Reynolds J. Exploring adverse childhood experiences in Appalachia. A summary of findings. ORAU

& Appalachian Regional Commission. https://www.orau.gov/hsc/downloads/RuralSummitForChildhoodSuccess/ACEs%20in%20Appalachia_Summary%20Report_FINAL.pdf. Published January 2018.
38. Healthy people 2020. Social determinants of health. Office of Disease Prevention and Health Promotion, US Department of Health and Human Services website. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health. Published 2020.
39. Meit M, Heffernan M, Tanenbaum E, & Hoffmann T. Appalachian Diseases of Despair. https://www.arc.gov/assets/research_reports/AppalachianDiseasesofDespairAugust2017.pdf. Published 2017.
40. Helton LR, & Keller SM. Appalachian women: a study of resiliency assets and cultural values. Soc Sci Res. 2010; 36(2): 151-161. doi: 10.1080/01488370903578124.
41. Dakin EK, Williams KA. & MacNamara MA. Social support and social networks among LGBT older adults in rural southern Appalachia. J Gerontol Soc Work. 2020; 1-18. doi: 10.1080/01634372.2020.1774028
42. Keefe SE, ed. Participatory Development in Appalachia: Cultural Identity, Community, and Sustainability. Knoxville, TN: Univ. of Tenn. Press; 2009.
43. Roberts L, Banyard V, Grych J, & Hamby S. Well-being in rural Appalachia: age and gender patterns across five indicators. J Happiness Stud. 2019; 20: 391-410. https://doi.org/10.1007/s10902-017-9951-1.
44. Denham SA. Does a culture of Appalachia truly exist? J Transcult Nursing. 2016; 27 (2): 94-102. doi: 10.01177//1043659615579712.
45. Cockerill K, & Groothuis P. Last settler's syndrome and resource use in southern Appalachia. Journal of Rural and Community Development. 2014; 9(3): 319-336. https://journals.brandonu.ca/jrcd/issue/view/24
46. Boyer J. Reinventing the Appalachian commons. Social Analysis. 2006; 50(3): 217-232. doi: 10.3167/015597706780459377.
47. Baker C. (2016). Globalization and family farm survival in southern Appalachia. Bulletin of the Transilvania University of Brasov Series IV: Philology and Cultural Studies. 2016; 9(58) No. 1: 101-108.
48. Trozzo K, Munsell J, Niewolny K, & Chamberlain JL. Forest food and medicine in contemporary Appalachia, Southern Geographer. 2019; 59(1): 52-76. https//muse.jhu.edu/article/715958.
49. Thomsen JM, Powell RB, & Monz C. A systematic review of the physical and mental health benefits of wildland recreation, J Park Recreat Admi. 2018; 36: 123-148. https://doi.org/10.18666/JPRA-2018-V36-I1-8095.:
50. QuickFacts. Watauga county, North Carolina; United States. US Census Bureau website. https://www.census.gov/quickfacts/fact/dashboard/wataugacountynorthcarolina,US/PST045219. Accessed June 7, 2020.
51. Raynor, D. North Carolina's median age of residents continues to rise. News & Observer. https://www.newsobserver.com/news/local/article231678823.html. Published June 20, 2019.
52. Staley K. LGBTQ life in Watauga County, North Carolina, 1960-2009. http://outhistory.org/exhibits/show/watauga/sources. Published 2010.
53. 2019 point in time count NC-516 Northwest North Carolina coc population: sheltered and unsheltered count. Hospitality House of Northwest North Carolina website. https://a9ceef39-fc2d-4044-9ffc-2610772f7142.filesusr.com/ugd/d9b090_424cbda5a27a45609f22de311d2e0f1d.pdf. Accessed June 6, 2020.
54. 2017 Community health report. Watauga county. Appalachian District Health Department website. https://www.apphealthcare.com/wpfb-file/watauga-county-community-health-report-2017-pdf/. Published 2018.
55. Keefe S E, & Curtin L. (2011). Mental health in Appalachia. In Ludke, R, & Obermiller, P, ed. Appalachians: Their Health and Well-being. Louisville, KY: University Press Kentucky; 2011: 223-250.
56. Rickard, A. & Yancey, C.T. (2018). Rural/nonrural differences in psychosocial factors among sexual minorities. J Gay Lesbian Soc Serv. 2018; 20(8), 154-171. https://doi.org/10.1080/10538720.2018.1444525.
57. Presnell, D. Preventing and treating trauma, building resiliency: the movement toward Compassionate Schools in Watauga county, North Carolina. NC Med J. 2018; 79(2): 113-114. doi: https://doi.org/10.18043/ncm.79.2.113.
58. Watauga Compassionate Community Initiative (WCCI). Preventing trauma. Building resiliency. Watauga Compassionate Community Initiative website. Retrieved from https://www.wataugacci.org/. Updated 2020.
59. ACEsConnection. Join the movement to prevent ACEs, heal trauma, and build resilience. ACEsConnection.com website. https://www.acesconnection.com/. Updated 2020.
60. Matlin SL, Champine RB, Stambler MJ, et al. A community's response to adverse childhood experiences: building a resilient, trauma-informed community. Am J Community Psychol. 2019; 64: 451-466. doi 10.1002/ajcp.12386.
61. Tellegen CL, & Sanders MR. Stepping Stones Triple P-Positive Parenting Program for children with disability: a systematic review and meta-analysis. Res Dev Disab. 2013; 34: 1556-1571. http://dx.doi.org/10.1016/j.ridd.2013.01.022.
62. Wright B, & Edginton E. Evidence-based parenting interventions to promote secure attachment: findings from a systematic review and meta-analysis. Glob Pediatr Health. 2016; 3: 1-14. doi: 10.1177/2333794X16661888.
63. Dodge KA, & Goodman WB. Universal reach at birth: Family Connects. The Future of Children. 2019; 29(1): 41-60. https://futureofchildren.princeton.edu/publications.
64. Wolpow R, Johnson M.,Hertel R, & Kincaid SO. The heart of learning and teaching: compassion, resiliency, and academic success. Olympia, WA: Washington State Office of Superintendent of Public Instruction (OSPI) Compassionate Schools. https://www.k12.wa.us/student-success/health-safety/mental-social-behavioral-health/compassionate-schools-learning-and/heart-learning-compassion-resiliency-and-academic-success. Updated May 2016.
65. Fondren K Lawson, M, Speidel R, McDonnell CG, & Valentino K. Buffering the effects of childhood trauma within the school setting: a systematic review of trauma-informed and trauma-responsive interventions among trauma-affected youth. Child Youth Serv Rev. 2020; 109: 104691. doi: 10.1016/j.childyouth.2019.104691.
66. Herrenkohl TI, Hong S, & Verbrugge B. Trauma-informed programs based in schools: linking concepts to practices and assessing the evidence. Am J Community Psychol. 2019; 64: 373-388. doi: 10.1002/ajcp.12362.
67. Albright A, Michael K, Massey C, Sale R, Kirk, A, & Egan T. (2013). An evaluation of an interdisciplinary rural school mental health programme in Appalachia, Adv Sch Ment Health Promot. 2013: 1-14. https://doi.org/10.1080/1754730X.2013.808890
68. Michael KD, Albright A, Jameson JP, et al. Does cognitive behavioural therapy in the context of a rural school mental health programme have an impact on academic outcomes? Adv Sch Ment Health Promot. 2013; 6(4): 247–262. http://

dx.doi.org/10.1080/1754730X.2013.832006.
69. Kirk A, Michael K, Bergman S, Schorr M, & Jameson JP. Dose response effects of cognitive-behavioral therapy in a school mental health program, Cognitive Behaviour Therapy. 2019; 48(6): 497-516, doi: 10.1080/16506073.2018.1550527.
70. Sulkowski ML, & Michael K. (2014). Meeting the mental health needs of homeless students in schools: A Multi-Tiered System of Support framework. Child Youth Serv Rev. 2014; 44: 145–151. https://doi.org/10.1016/j.childyouth.2014.06.014.
71. Student services. ASC Center. Watauga High School website. https://www.wataugaschools.org/Page/1783. Accessed June 7, 2020.
72. Michael KD, George MW, Splett JW, et al. Preliminary outcomes of a multi-site, school-based modular intervention for adolescents experiencing mood difficulties. J Child Fam Stud. 2016; 25: 1903-1915. doi: 10.1007/s10826-016-0373-1.
73. Capps RE, Michael K.D, & Jameson JP. Lethal means and adolescent suicidal risk: an expansion of the PEACE protocol. Journal of Rural Mental Health. 2019; 43(1): 3-16. https://doi.org/10.1037/rmh0000108.
74. Michael K, Jameson J., Sale R, et al. A revision and extension of the prevention of escalating adolescent crisis events (PEACE) protocol. Child Youth Serv Rev. 2015; 59: 57-62. https://doi.org/10.1016/j.childyouth.2015.10.014
75. Sale, R., Michael, K. Egan, T., Stevens, A. & Massey, C. Low base rate, high impact: responding to teen suicidal threat in rural Appalachia. Report on Emotional & Behavioral Disorders in Youth. 2014;14(1): 4-8. https://www.civicresearchinstitute.com/online/article.php?pid=5&iid=776
76. Davis MT. (2014). Religious and non-religious components in substance use treatment: a comparative analysis of faith-based and secular interventions. Journal of Social Work. 2014; 14(3): 243-259. doi: 10.1177/1468017313476589.
77. Haynes T, Turner J, Smith J, et al. (2018). Reducing depressive symptoms through behavioral activation in churches: a hybrid-2 randomized effectiveness-implementation design. Contemp Clin Trials. 2018; 64: 22-29. Retrieved from https://doi.org/10.1016/j.cct.2017.11.010.
78. Dube SR, Williamson DF, Thompson T, Felitti VJ, & Anda RF. Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. Child Abuse Neg. 2004; 28: 729-737. doi:10.1016/j.chiabu.2003.08.009
79. Finkelhor D. (2018). Screening for adverse childhood experiences (ACEs): cautions and suggestions. Child Abuse Negl. 2018; 85: 174-179. http://dx.doi.org/10.1016/j.chiabu.2017.07.016.
80. McLennan, J.D., MacMillan, H.L. & Afifi, T.O. Questioning the use of adverse childhood experiences (ACEs) questionnaires. Child Abuse Negl. 2020; 101: 1-4. Retrieved from https://doi.org/10.1016/j.chiabu.2019.104331.
81. Ulzen T, Williamson L, Foster PP, & Parris-Barnes K. (2013). The evolution of a community-based telepsychiatry program in rural Alabama: lessons learned-a brief report. Community Mental Health J. 2013; 49: 101-105. doi: 10.1007/s10597-012-9493-2
82. Luque, J.S. & Castaneda, H. (2013). Delivery of mobile clinic services to migrant and seasonal farmworkers: a review of practice models for community-academic partnerships. J Community Health. 2013; 38: 397-407. doi 10.1007/s10900-012-9622-4.
83. Hargrove D S, Curtin L, & Kirschner, B. L. Ruralism and regionalism: Myths and misgivings regarding the homogeneity of rural populations. In Michael KD, & Jameson JP (ed). Handbook of Rural School Mental Health. New York, NY: Springer: 2017: 249-259.